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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,283	12/22/2000	Stefan Parkvall	2380-289	8178
23117	7590	09/30/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			SEFCHECK, GREGORY B	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/742,283

Applicant(s)

PARKVALL ET AL.

Examiner

Gregory B. Sefcheck

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 8-18, 21-28, 30-32, 34-43 and 46-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-18, 21-28, 30-32, 34-43 and 46-50 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 21, 30, and 46 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### **PROSECUTION REOPENED**

1. In view of the Appeal Brief filed on 6/27/2005, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

- Claims 1-5, 8-18, 21-28, 30-32, 34-43, and 46-50, as filed 9/7/2004, remain pending.

Examiner NOTE: The claims as presented in the Appendix to the Brief contain substantial errors. Cancelled claims 6, 7, 19, 20, 29, 33, 44, and 45 were omitted, with the remaining pending claims moved up in sequential order. For examination purposes, the claims as submitted 9/7/2004 have been used in the rejections below.

### ***Claim Objections***

2. Claims 8, 9, 21, 30, and 46 are objected to because of the following informalities:

Claims 8, 9, 21, 30, and 46 depend from claims that have been cancelled in the Amendment filed 9/7/2004. In order to expedite prosecution, the dependency of the claims will be assumed as follows:

- Claims 8 and 9 depending from claim 1.
- Claim 21 depending from claim 14.
- Claim 30 depending from claim 26.
- Claim 46 depending from claim 42.

A formal amendment clarifying the dependency of these claims is required in the next communication from the Applicant.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 14-18, 21-25, 39-43, and 46-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Regarding claim 14,

Claim 14 recites the limitation "the base station" in lines 4-5. There is insufficient antecedent basis for this limitation in the claim.

- Regarding claims 14 and 39,

Claims 14 and 39 recites the limitation "the feedback signal" in line 10 and 13, respectively. There is insufficient antecedent basis for this limitation in the claim.

- Claims 15-18, 21-25, 40-43, and 46-50 are rejected because of their dependence from claims 14 and 39, respectively.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 4, 5, 8, 9, 26, 27, 30-32, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen (US 20030185286A1) in view of Balachandran et al. (US 20020036992A1), hereafter Balachandran.

- In regards to Claims 1, 2, 4, 9, 26, 27, 31, and 38,

Yuen discloses a handoff method in a cellular spread spectrum communications network/system. Referring to Fig. 22, Yuen show mobile 60 (first node) communicating initially with base station 61 (second node) by both transmitting (first channel) and receiving (second channel; Abstract; claim 1,26,38 – method and units in mobile radio system where data packets are communicated from first node to second node/between one or more base stations and wireless user units over first channel and feedback signal is sent from second node to first node over a second channel).

Yuen shows that mobile 60 may receive a plurality of signals from a plurality of base stations 61, 62 during a handoff operation. Yuen discloses mobile 61 has a monitoring means for monitoring the signal quality of the first received signal and determines the signal quality of the signal received from base station 61 as compared to the signal quality of the signal received from base station 62 and/or a predetermined

threshold through a comparison means (Pg. 10-11, paragraphs 173-174; claim 1,26 – first node detector determines condition/signal quality of second channel/uplink).

If the quality of the signal received from base station 61 falls below the predetermined threshold and/or second quality, a handoff is initiated and data to be transmitted is queued (delayed) until the handoff is completed and channel quality is sufficient to transmit the stored data (Abstract; Pg. 10-11, paragraphs 168-177; claim 1,26 – first node scheduler delaying transmission over first channel/downlink until quality of second channel/uplink exceeds predetermined threshold; claims 2,27 - schedules transmission over first channel/downlink based on whether determined condition of second channel/uplink is sufficient; claim 9 – transmitting data packets after a preset delay period).

Yuen does not explicitly disclose the use of an ACK, NACK or lost feedback signal sent back to the first node from the second node over the second channel.

Balachandran discloses method and apparatus for packet size dependent link adaptation for wireless packets. Balachandran discloses the use of ACK/NACK feedback signals within the ARQ protocol for providing reliable data transmission (Pg. 1-2, paragraphs 3, 4, 7, 19-29; claim 1,14,26,39 – feedback signal is an ARQ protocol acknowledge signal, negative acknowledge signal or lost signal corresponding to a data packet transmitted over the first channel; claim 4,31 – determining condition of second channel is sufficient to accurately receive feedback signal).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Yuen by utilizing an ARQ protocol feedback signal between the nodes, as shown by Balachandran. ARQ is a protocol well-known in the art for providing reliable communications. The use of ARQ in the system and method of Yuen would provide verification that the signal quality determined to be sufficient for data transmission was maintained throughout the transmission and reception was performed properly.

- In regards to Claim 5, 8, 30, and 32,

Yuen discloses a handoff method in a cellular spread spectrum communications network/system that covers all limitations of the parent claims.

Yuen discloses that the sufficiency of the signal quality may be determined through typical parameters used for signal quality, such as probability of error and signal-to-noise ratio (Pg. 11, paragraph 178; claim 5,32 – the sufficiency of the second channel is determined so that a probability of error in the received feedback signal is below an error threshold).

Official Notice is taken signal-to-interference ratio is another such typical parameter known in the art (claim 8,30 – predetermined threshold is a signal-to-interference ratio)



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7. Claims 3, 10-12, 14-18, 21, 22, 28, 34-36, 39-43, 46, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen in view of Balachandran as applied to claims 1, 2, 4, 5, 8, 9, 26, 27, 30-32, and 38 above, and further in view of Labonte et al. (US005991286A), hereafter Labonte.

- In regards to Claims 3, 10-12, 14, 16, 17, 21, 22, 28, 34-36, 39, 41, 42, 46, and 47,

Yuen discloses a handoff method in a cellular spread spectrum communications network/system that covers all limitations of the parent claims and limitations of claims 14, 17, 21, 39, 42, and 46 as shown above in the rejection of claims 1, 9, and 26 (Fig. 22; claim 22,47 – wireless user is communicating with two base stations in a soft handover).

Yuen does not explicitly disclose the base station performing the functions signal quality determination and data scheduling/delaying based upon the signal quality determination.

Labonte discloses a method and cellular system for communicating data packets between a base station and a mobile user over uplink and downlink channels. Referring to Fig. 3, Labonte shows a signal quality measurement is made of both the uplink and downlink channels at the base station and/or mobile station (Col. 7, lines 32-45; claim 14,39 – method implemented in base station; claim 3,16,28,41 – first node detector to determine condition/signal quality of first channel/downlink; claim 10,11,34,35 – first node is a base station/wireless unit in a radio communications network and second is a

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wireless unit/base station; claim 10,11,34,35 – first channel is a downlink/uplink and the second channel is an uplink/downlink; claim 12,36 – first node is a radio network controller coupled to one or more base stations in a radio network and second node is a wireless user unit).

A determination is made as to whether the signal quality uplink and downlink is sufficient for packet data communications (Col. 7, lines 50-53; claim 3,16,28,41 – first node controls/schedules transmission over first channel/downlink based on determined conditions of first/downlink and second/uplink channels).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Yuen by enabling the mobile and base station to perform signal quality determination and data scheduling/delaying based upon the signal quality determination, as shown by Labonte. This modification would permit data transmission based on handoff processing to be controlled by either the mobile or the base station, ensuring transmission and/or reception on sufficient quality channels in either direction to and/or from both the base station and/or mobile.

- In regards to claims 15, 18, 40, and 43,

Yuen discloses a handoff method in a cellular spread spectrum communications network/system that covers all limitations of the parent claims.

Yuen discloses that the sufficiency of the signal quality may be determined through typical parameters used for signal quality, such as probability of error and

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signal-to-noise ratio (Pg. 11, paragraph 178; claim 18,43 – the sufficiency of the second channel is determined so that a probability of error in the received ARQ feedback signal is below an error threshold).

Official Notice is taken signal-to-interference ratio is another such typical parameter known in the art (claim 15,40 – predetermined threshold is a signal-to-interference ratio)

8. Claims 13 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen in view of Balachandran as applied to claims 1 and 26 above, and further in view of Garceran et al. (US006522888B1), hereafter Garceran.

9. Claims 23-25 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen in view of Balachandran and Labonte as applied to claims 14 and 39 above, and further in view of Garceran et al. (US006522888B1), hereafter Garceran.

- In regards to Claims 13, 23-25, 37, and 48-50,

Yuen discloses a handoff method in a cellular spread spectrum communications network/system that covers all limitations of the parent claims.

Garceran discloses a method in a wireless radio communication system for communicating data from base stations to mobile users over forward- and reverse-link

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channels. Garceran shows that transmission control from base station to mobile unit may be controlled based upon conditions other than uplink signal quality, including traffic load at the serving base station and the propagation environment (frequency and speed; Doppler frequency; Col. 3, lines 15-25, 32-45, 50-61; claim 13,23,37,48 – controlling transmission over first channel/downlink without regard to the condition/signal quality of the second channel/uplink when another condition is detected; claim 24,49 – detected condition is when a Doppler frequency of the uplink exceeds a threshold; claim 25,50 – detected condition is when a load of a cell corresponding to the base stations is less than a threshold).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of Yuen by controlling transmission based upon detected conditions other than uplink signal quality, as shown by Garceran, thereby enabling the system to adapt data communication based upon multiple varying conditions of the network, rather than simply based on channel quality.

### ***Response to Arguments***

10. Applicant's arguments in the Appeal Brief filed 6/27/2005 with respect to claims 1-5, 8-18, 21-28, 30-32, 34-43, and 46-50 have been considered but are moot in view of the new ground(s) of rejection.

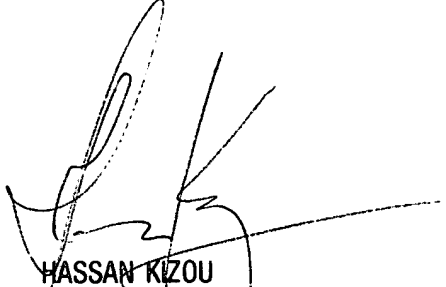
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B. Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GBS  
9-27-2005



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